NPIC/TSSG/RED-093-70
17 March 1970

MEMORANDUM FOR: Chairman, EXRAND

SUBJECT : Coordination of Three NPIC R&D Projects

1. The following paragraphs briefly describe three NPIC R&D projects planned for contracting in FY-70. Inquiry has been made concerning the uniqueness of the first two projects at CIA, NRTSC, USATOPOCOM, and RADC. These descriptions are provided for information to EXRAND members and to request their notification if any unwarranted duplication of other R&D projects is implied.

2. Viewing Systems Study. This viewing systems study is directed toward compiling, in one single source, somewhat generalized objective data on the design/production problems commonly encountered in the development of imagery exploitation viewing equipment. The study will encompass, but not be limited to, such optical parameters as magnification, image rotation, field-of-view, resolution, focus, phoria, field flatness, color aberrations, coma, flare, etc. The advisability of pursuing different optical design approaches and the establishment of trade-off and cross-over points relating to development cost, precision manufacture and follow-on production cost versus anticipated optical performance, are desired results.

3. Coherent, White-Light Viewer. This development effort will consist of the design and fabrication of a coherent white light viewer breadboard suitable for evaluation of predicted increased resolution and for use as experimental equipment to determine light source specifications for color film viewers. To accomplish these tasks, three monochromatic laser outputs will be used as primary colors, and combined additively to form white light of selected chromatic content. An incoherent source of light will be provided for comparison purposes. Suitable optics, viewing screen and light manipulation devices will be included.

4. Analysis of Display Technology. This project will result in the compilation of a reference, listing the CRT display components and systems and their performance parameters, which are currently available from industry. Evaluations of the equipment will be made in light of

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several proposed applications to NPIC exploitation operations. Technological limits and cost trade-offs will be described. A prognosis of the equipment that will be available five years from now will be made.

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Chairman, Technical Task Team,
EXRAND

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